METHOD AND APPARATUS FOR PERFORMING QUALITY
VIDEO COMPRESSION AND MOTION ESTIMATION

ABSTRACT OF THE DISCLOSURE

5   An apparatus and method for performing two-pass real time video compression is provided. Tactical decisions such as encoding and quantization values are determined in software, whereas functional execution steps are performed in hardware. By appropriately apportioning the tasks between software and hardware, the benefits of each type of processing are exploited, while minimizing

10   both hardware complexity and data transfer requirements. One key concept that allows the compression unit to operate in real time is that the architecture and pipelining both allow for B frames to be executed out of order. By buffering B frames, two-pass motion estimation techniques can be performed to tailor bit usage to the requirements of the frame, and therefore provide a more appealing output

15   image.